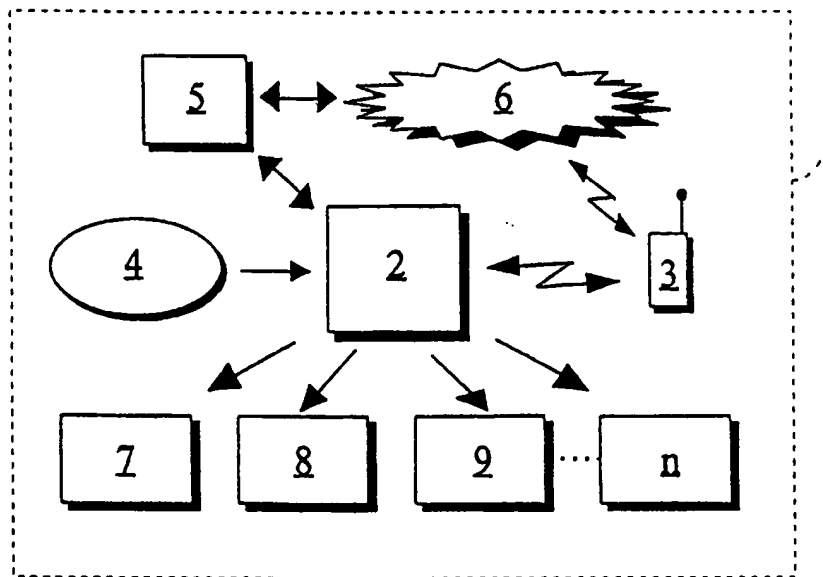




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<p>(21) International Application Number: PCT/FI99/00230 (22) International Filing Date: 23 March 1999 (23.03.99) (30) Priority Data: 980687 26 March 1998 (26.03.98) FI (71) Applicant (for all designated States except US): SONERA OY [FI/FI]; Teollisuuskatu 15, FIN-00510 Helsinki (FI). (72) Inventors; and (75) Inventors/Applicants (for US only): TORKKI, Markus [FI/FI]; Mäkelänkatu 27 A 12, FIN-00550 Helsinki (FI). GRÖNBERG, Sami [FI/FI]; Koskelantie 7 B 12, FIN-00610 Helsinki (FI). (74) Agent: PAPULA REIN LAHTELA OY; P.O. Box 981, Fredrikinkatu 61 A, FIN-00101 Helsinki (FI).</p>	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Finnish).</i></p>	

(54) Title: METHOD AND SYSTEM FOR PROFILE MANAGEMENT



(57) Abstract

Method and system for the management of a user's network service profiles in a telecommunication system comprising a telecommunication network (1), a number of service bases (7, 8, 9, ..., n) for maintaining the service data for each network service for the subscriber and for setting up the service, and a terminal (3). According to the invention, the services implemented for the subscriber on different service bases are assembled into profiles comprising at least one network service, and the profiles are controlled in a centralised manner from a profile server (2) in accordance with settings created there beforehand.

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METHOD AND SYSTEM FOR PROFILE MANAGEMENT**FIELD OF THE INVENTION**

The present invention relates to a method as
5 defined in the preamble of claim 1 and to system as
defined in the preamble of claim 5 for the management
of users' network service profiles.

BACKGROUND OF THE INVENTION

10 The use of network services, such as call
transfer and call waiting services for mobile tele-
phone subscribers, in a telecommunication network has
been common practice for many years. The user has to
order different services separately by setting up a
15 connection with the desired service base from his/her
own terminal and giving a setting to activate the
service in question. After this, the settings stored
in the service base control an application server and
the application produces the desired services for the
20 terminal until the function is deactivated by again
setting up a connection with the service base and
changing the settings.

A problem with the above-mentioned method is
the difficulty of activating and deactivating network
25 services. If several services have to be turned on at
the same time, the service base settings for each
service have to be changed separately. Moreover, the
difficulty of activating network services is a re-
striction on comprehensive use of the possibilities
30 created by network services. It is not possible to
make network service settings that change the service
functions automatically in accordance with a predeter-
mined instruction. Further, it is impossible or very
difficult to change the service settings of a plural-
35 ity of different network services simultaneously.

A further problem with the use of network services is that the services cannot function unless the terminal is connected to the network. Services cannot be active if e.g. the terminal has been switched off. In addition, it is difficult and time-consuming to verify which services have been activated for the terminal. If the subscriber to the services is uncertain about his/her active services, he/she must check their status by establishing a connection separately with each service base and checking the service status there. Furthermore, verifying the service status in a graphic form is not possible.

BRIEF DESCRIPTION OF THE INVENTION

The object of the present invention is to eliminate the drawbacks mentioned above or at least to significantly alleviate them.

A specific object of the present invention is to disclose a method and system for centralised and continuous management of network service profiles regardless of whether the subscriber's terminal is connected to the network or not. 'Profile' here means a set of network services for a subscriber, with subscriber-specific settings defined for the set. A further object of the invention is to provide means for easier and faster use of network services and for easier and faster changing of their settings and also to provide a possibility to use services implemented in different systems.

As for the features characteristic of the invention, reference is made to the claims.

The telecommunication system of the invention for service profile management comprises a telecommunication network, such as a mobile telephone network, together with a service base for maintaining service data for each network service used by a subscriber and for setting up the service.

Furthermore, the telecommunication system of the invention comprises a profile server connected to the terminal via a telecommunication network and containing storage areas for the control of the service
5 bases of all network services used by the subscriber.

According to the invention, network services implemented for a subscriber on different service bases are assembled into profiles. A profile comprises at least one network service and the profiles are managed in a centralised manner from a profile server
10 provided for the subscriber, in accordance with settings established in the server. A subscriber may have one or more profiles, and all profiles are defined in the profile server. Selection of service profile is
15 effected either via control by an external signal or via activation by the subscriber, in accordance with location information, time of day and/or other functions programmed in the profile server.

Further, according to the invention, one or
20 more profiles may be continuously active. The subscriber can also deactivate all profiles. Furthermore, the subscriber to network services can change the settings in the profile server from his/her own terminal or from another system, e.g. from the Internet, via
25 service pages established there. To allow the settings to be changed and/or checked from another system, a separate server is provided, which makes it possible to transmit and change subscriber-specific settings in the profile server between systems. This provides e.g.
30 the possibility to print out the service profiles for a subscriber in a graphic form to a terminal connected to the subscriber's telecommunication network.

The system of the invention comprises means for activating and deactivating the network services
35 for a subscriber via a profile server. Furthermore, the system comprises means for maintaining and chang-

ing the settings and identifying the subscriber in the profile server.

According to the invention, the profile server controls the network services even if the terminal is not connected to the telecommunication network.

The invention makes it considerably easier to use network services and provides a possibility to program service profiles so that they will function in accordance with pre-established settings. Moreover, the service profiles can be caused to change easily and preferably automatically, e.g. according to time of day, location data, via activation by subscriber and/or by some other external signal. In addition, the invention makes it possible to easily change the whole profile with a single command.

Further, the invention provides an easy way for the subscriber to check his/her network services. All profiles can be verified from the network server. The verification can also be done in a graphic form or via some other system. Moreover, in the system of the invention, the terminal need not have a continuous connection with the telecommunication network, but the services function under the control of the profile server. The profile server preferably also allows the use of services implemented in other systems.

BRIEF DESCRIPTION OF THE DRAWING

In the following, the invention will be described in detail by the aid of embodiment examples with reference to the attached drawing, which presents an embodiment of the system of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The system illustrated in Fig. 1 comprises a profile server 2, which is provided with storage areas

for the storage of data needed for the control of service bases 7, 8, 9, ..., n. Further, the system comprises a terminal 3 and an external excitation 4, by means of which the functions of the profile server are controlled. The external excitation 4 may be e.g. a signal source dependent on the location of the subscriber's terminal. Moreover, the system comprises a server 5 provided with a graphic user interface which can be used via the Internet 6.

10 In an embodiment as illustrated in Fig. 1, the user of a terminal 3 wants to create two different service profiles for his/her mobile station: profile A and profile B. Profile A comprises the following functions: call waiting service activated, call transfer to another number and call transfer back to the mobile station's own number if there is no answer from the former number within fifteen seconds. Profile B is the same as profile A, but without the call waiting service. The user of the mobile station wants to have profile A active every day from 07:00 to 16:00 and profile B at other times. He/she stores in the profile server 2 the functions required for the control of the desired profiles consisting of network services via his/her own terminal 3 or e.g. by using services created for the Internet 6.

25 In the Internet 6, changes can be made in subscriber-specific profiles via the service provider's home pages created in a server 5. On the home pages, the subscriber is identified and can then change his/her existing profiles or create new ones in a graphic form. In the Internet, the subscriber can quickly and advantageously check the profiles currently valid for him/her. In addition to the Internet, other systems or services, such as a service number, connected to the telecommunication network 1 can be used for the same purpose.

After the above-mentioned actions, the profile server 2 automatically changes the profile every day at 07:00 and at 16:00 hours. The profile server changes the profiles by sending commands to the relevant service bases. In the case of the above example, the profile server sends a MML command (MML, Man Machine Language) to the subscriber's home location register (HLR), which in this case is a service base 7, to change the service setting. In the case of the example, no other changes need to be made after the first activation of the services because the other services are the same in both profiles.

In the case of the example, there may be numerous different services simultaneously and they all can be activated and deactivated in a centralised manner from the profile server. The functions of other network services are controlled in accordance with the settings in their own service bases 7, 8, 9, ..., n, and all these are controlled and activated/deactivated in a centralised manner from the profile server. The activation/deactivation of the services can also be effected using an external excitation 4 supplied to the profile server. The external excitation may be any signal designed for the purpose, and the system permits the use of a plurality of such signals.

The invention is not restricted to the embodiment example described above, but many variations are possible within the scope of the inventive idea defined in the claims.

CLAIMS

1. Method for the management of a user's network service profiles in a telecommunication system comprising a telecommunication network (1), a number
5 of service bases (7, 8, 9, ..., n) for maintaining the service data for each network service for the subscriber and for setting up the service, and a terminal (3), characterised in that the services implemented for the subscriber on different service
10 bases are assembled into profiles comprising at least one network service, and the profiles are controlled in a centralised manner from a profile server (2) in accordance with settings created there beforehand.

2. Method as defined in claim 1, characterised in that the selection of service profile
15 for the subscriber in the profile server (2) is effected by means of an external signal, via activation by the subscriber, according to location data, time of day and/or functions programmed in the profile server.

3. Method as defined in claim 1 or 2,
20 characterised in that the user of the terminal (3) changes the subscriber-specific profiles stored in the profile server (2) or their control functions via his/her own terminal or via another system.

4. Method as defined in any one of claims 1 -
25 3, characterised in that the network services function under control of the profile server (2) even if the subscriber's terminal (3) should be disconnected from the network or switched off.

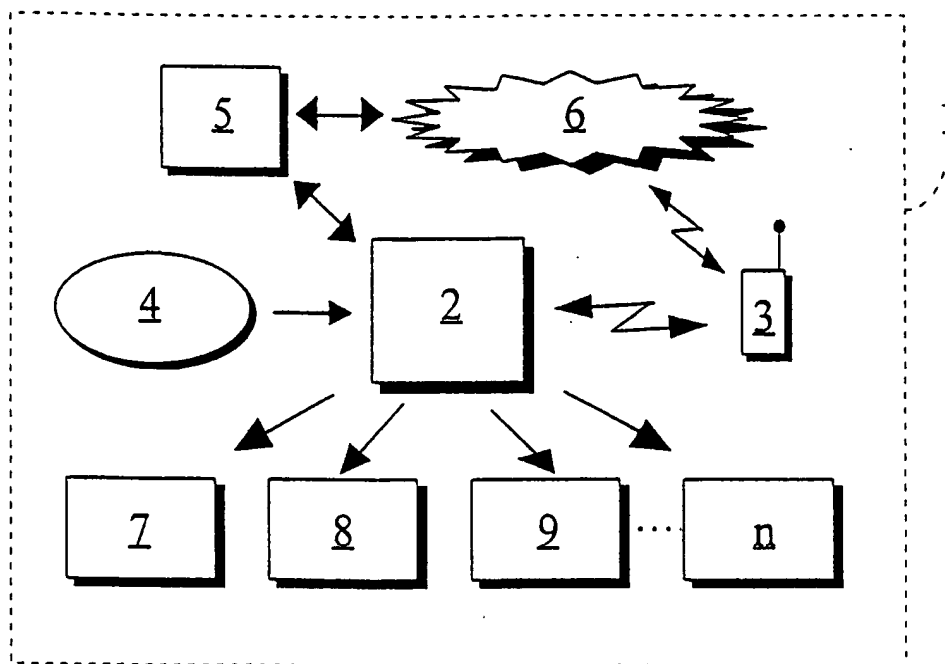
5. System for the management of a user's network service profiles in a telecommunication system comprising a telecommunication network (1), a number
30 of service bases (7, 8, 9, ..., n) for maintaining the service data for each network service for the subscriber and for setting up the service, and a terminal
35 (3), characterised in that the system comprises a profile server (2) storing information for

centralised management, in accordance with pre-established settings, of profiles formed from network services implemented for the subscriber on different service bases, said services comprising at least one
5 network service.

6. System as defined in claim 5, characterised in that the profile server (2) comprises means for the creation of profiles, identification of subscribers, control of network services and
10 changing of subscriber-specific settings of the service bases (7, 8, 9, ..., n).

7. System as defined in claim 5 or 6, characterised in that the profile server (2) comprises means for changing the settings from the subscriber's terminal (3).
15

8. System as defined in any one of claims 5 - 7, characterised in that it comprises a server (5) connected to the profile server (2) via the telecommunication network (1) to allow service profiles to be transmitted, presented and modified in
20 some other system (6), such as the Internet.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 99/00230

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: H04M 3/42 According to International Patent Classification (IPC) or to both national classification and IPC		
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Minimum documentation searched (classification system followed by classification symbols)		
IPC6: H04M, H04Q		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
EDOC, WPIL		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9803005 A1 (EUROPOLITAN AB), 22 January 1998 (22.01.98), page 2 - page 6, claims 1,4,5-8, abstract --	1,3-8
X	US 5206899 A (ALOK K. GUPTA ET AL), 27 April 1993 (27.04.93), column 3, line 30 - line 40, claim 1 --	1-2,4-8
P,A	WO 9827751 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 25 June 1998 (25.06.98), page 3 - page 4 --	1-8
P,A	WO 9842115 A1 (TELECOM FINLAND OY), 24 Sept 1998 (24.09.98), claim 1, abstract --	1-8
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9423523 A1 (NOKIA TELECOMMUNICATIONS OY), 13 October 1994 (13.10.94), page 1 - page 4 --	1-8
A	SE 9603265 A (TELIA AB), 6 March 1998 (06.03.98) --	1-8
A	SE 9300787 A (TELIA AB), 11 Sept 1994 (11.09.94), abstract -- -----	1-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

01/07/99

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9803005 A1	22/01/98	AU 3712197 A	09/02/98
		EP 0909505 A	21/04/99
		NO 990102 A	11/03/99
		SE 506976 C	09/03/98
		SE 9602765 A	13/01/98
US 5206899 A	27/04/93	NONE	
WO 9827751 A1	25/06/98	AU 4846797 A	25/06/98
		AU 5353198 A	15/07/98
		EP 0849960 A	24/06/98
		NO 975905 A	22/06/98
		SE 9604696 A	20/06/98
WO 9842115 A1	24/09/98	AU 5866898 A	12/10/98
		FI 102128 B	00/00/00
		FI 971114 D	00/00/00
WO 9423523 A1	13/10/94	AU 675708 B	13/02/97
		AU 6430394 A	24/10/94
		CN 1120878 A	17/04/96
		EP 0694239 A	31/01/96
		FI 92895 B,C	30/09/94
		FI 931559 D	00/00/00
		JP 8508375 T	03/09/96
		US 5870462 A	09/02/99
SE 9603265 A	06/03/98	NONE	
SE 9300787 A	11/09/94	AU 669936 B	27/06/96
		AU 5123293 A	26/04/94
		DE 69315228 D,T	12/03/98
		EP 0725878 A,B	14/08/96
		SE 0725878 T3	
		GR 3026088 T	29/05/98
		JP 8502108 T	05/03/96
		US 5655392 A	12/08/97